

The U.S. Clean Energy Initiative

Powering Sustainable Development from Village to Metropolis

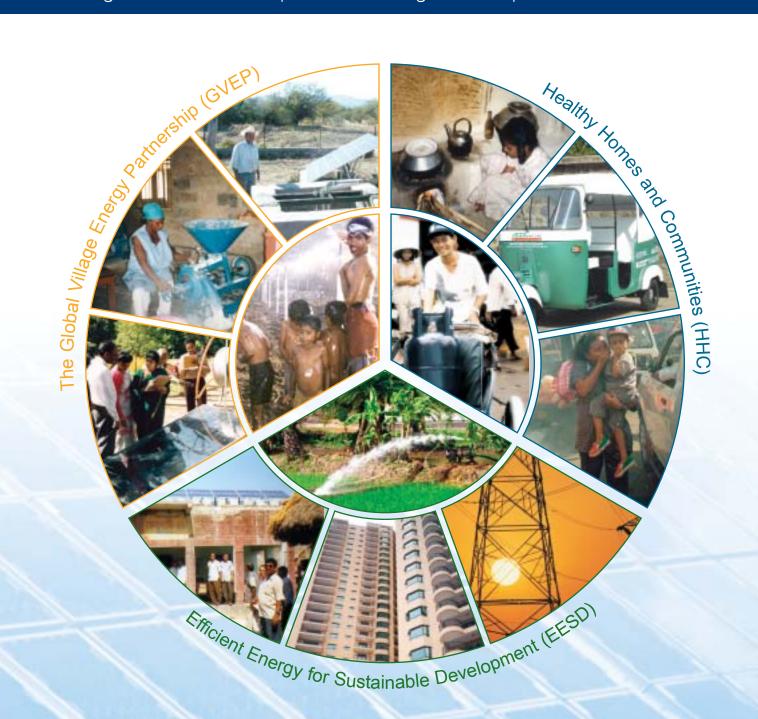
The U.S. Clean Energy Initiative

Access to affordable, reliable, clean, and efficient energy services is essential to breaking the cycle of poverty and achieving sustainable development. At the World Summit on Sustainable Development, the U.S. Government announced a new Signature Partnership for sustainable development – the Clean Energy Initiative: Powering Sustainable Development from Village to Metropolis.

The "Powering Sustainable Development" Initiative provides a foundation to meet President Bush's commitment to alleviate poverty, support education and health care, provide safe drinking water, reverse the loss of environmental resources and support the availability of new technologies by revolutionizing the delivery of energy services to the world's rural and urban poor. The Initiative seeks to provide millions of people with new access to energy services; increase the efficiency of energy, production, delivery and use; and significantly reduce readily preventable deaths and respiratory illnesses associated with motor vehicle and indoor air pollution. To achieve this aim, this U.S.-led, multi-year initiative has three parts:

- The Global Village Energy Partnership (GVEP)
 will increase access to modern and affordable
 energy services in areas either not served
 or under-served by current energy delivery
 systems. (USG lead: USAID)
- Efficient Energy for Sustainable Development (EESD)
 will improve the productivity and efficiency of
 energy systems, while reducing waste and
 pollution, saving money, improving reliability,
 and delaying the need for expensive new
 generating capacity. (USG lead: DOE)
- Healthy Homes and Communities (HHC)
 will promote clean transportation fuels
 (e.g. unleaded gasoline, low sulfur fuels),
 and healthier indoor cooking and heating
 practices to reduce the estimated 3 million
 annual and readily preventable deaths
 associated with air pollution and unhealthy
 patterns of energy use. (USG lead: EPA)

Powering Sustainable Development from Village to Metropolis



The Global Village Energy Partnership

Why GVEP

- Approximately 2 billion people are without electricity
- Women and children in many developing countries spend 1/3 of their productive life transporting fuelwood and water
- Current activities do not link to broader energy needs in agriculture, water, telecom, small industry, natural resource management, gender equity, health and education sectors
- Individual efforts to date have not been sufficient: weak political commitments and market barriers, insufficient number of enterprises, not enough information and lesson sharing, inadequate financing, insufficient accountability for results
- The global needs are beyond any single organization and require a partnership of organizations – public and private – to meet global energy service needs

Goal

Increased access to modern energy services around the world

Desired outcomes

- 400 million people and 50,000 new communities served
- Significant number of countries with energy-poverty reduction programs
- Cadre of trained entrepreneurs
- Increases in productivity, incomes, environmental conservation, quality of life
- Implementation vehicle for Millennium Development Goals
- Large-scale replication of innovative, business, technical and financial energy models
- 10:1 leveraging of U.S. Government funding

Objectives

- Catalyze country commitments to energypoverty reduction in rural, peri-urban and urban areas
- Bridge the gap between investors, suppliers and users to mitigate barriers to energy access
- Facilitate policy and regulatory frameworks for scale-up to engage private sector and civil society
- Serve as a marketplace for lessons learned, best practices
- Create and maintain effective coordination mechanisms among stakeholders
- Provide access to cleaner, more affordable energy sources for productive, social and consumptive uses including lighting, cooking and heating services

Case study - Urban energy access

In Ahmedabad, India, USAID is piloting a private sector – NGO alliance to improve electrical service to households living in informal urban settlements. In 2003, some 800 households in four chaals (slums) were upgraded from illegal and unreliable electrical service for which they paid the equivalent of \$5/month to illegal intermediate service providers. Households now pay about \$50 for a legal connection. Local women are trained to read meters and to collect tariffs from households – for which they are paid by the city's privately-owned electrical utility. The electrification of these communities has extended the number of hours that women can work, contributed to their ability to send their children to school, and provided their households with legal, safer, and more reliable electricity service. In addition, the utility has seen its unaccounted losses reduced to the industry standard of 10% in upgraded areas. This model is expected to ensure a long-term, sustainable solution to upgrade the living standards of slum dwellers.



Partners

Over 280 donor governments, developing countries, international organizations, industry and members of civil society

Partners commit to

- · Increase energy access and reduce poverty
- · 10-year "implementation-based and demand-driven" program
- · Advance market principles: energy sector reform, diversity of energy providers and funders
- · Consider multiple technologies, sectors and delivery approaches
- Focus on the poor
- Coordinate with related activities (national, local, regional) and partnerships
- Agree to report on results



In the Philippines, USAID is developing off-grid renewable energy systems in 170 remote rural communities in the Autonomous Region in Muslim Mindanao, through the Alliance for Mindanao Off-Grid Renewable Energy (AMORE). Through solar-powered battery charging stations and individual batteries for households and public facilities, residents are now saving 70% each month of what they used to spend on kerosene for light. Residents now have increased opportunities for productive activities such as mat weaving, sewing, extension of 'daylight' hours for study time and household work. The AMORE Project is electrifying remote communities of conflict-affected areas of Mindanao, lighting homes and hearths, and providing communities with economic incentives to achieve peace. In this era of globalization and advanced technology, no one should be left in the dark.







Efficient Energy for Sustainable Development

Why EESD

- Three billion people have access only to inadequate, unreliable and prohibitively expensive energy
- In many developing economies, energy demand is growing exponentially – energy expenses can be as high as 70%
- Efficiency losses for generation, delivery and use of energy range from 20 to 50%
- Even modest efficiency gains could free up some \$30 billion a year to address broader social and development goals
- Public-private partnerships needed to foster clean energy projects, regional cooperation and integrated economic development

Goal

Improve the productivity and efficiency of energy systems, while reducing pollution and waste, saving money and improving reliability through less energy intensive products, more energy efficient processes and production modernization

Desired outcomes

- 20% energy intensity reduction in up to 20 host countries
- · Efficient energy projects in 20 countries
- 10:1 leveraging of U.S. Government funding
- Reduce the occurrence of blackouts and brownouts in up to 10 major cities
- Establish U.S. Community Partnerships in up to eight countries
- Federal Energy Management Plans saving at least 20% of central budget overhead costs for improving public facilities in up to 10 countries
- · CLASP in up to 20 countries
- Energy efficient building codes established in up to 15 developing countries
- · WATERGY in up to 20 countries
- Financial facilities that support upgrades to 10,000 schools, 5,000 medical facilities and 10,000 low income multi-family buildings in 10 countries

Objectives

Assist host countries reduce poverty and get ahead of their development curve through:

- Leadership Promote public leadership though community partnerships, projects at public facilities, standards and labeling, best practices, technical standards, and policies that spur demand for energy efficient products, services and technologies
- Finance Facilitate locally managed financial programs to attract affordable and long-term financing and to scale-up projects that are 'market' driven based on demand for capital and services
- Technology Build capacity to access and adopt cleaner and more efficient technologies
- Efficiency gains in energy production and delivery
- Modernizing industrial and agricultural operations
- Project development and implementation services
- Technical and managerial assistance to local entrepreneurs



Partners

Over 60 donor governments, developing countries, international organizations, industry and civil society

Partners commit to

- Improve energy efficiency and reduce poverty
- Develop new business and financing models for sustainable development and clean energy projects
- Promote integrated development by optimizing the forces of the new global marketplace (information, investment, technology) for economic growth, social development and environmental progress
- Form new alliances with governments, international organizations, industry and civil society to facilitate project development and coordinated programs
- Focus on capacity building and technical and managerial assistance
- Facilitate the adoption of energy efficiency standards, labeling and best practices
- Promote institutional and policy agendas to enable investment in energy efficient and clean technologies
- · Monitor and report results

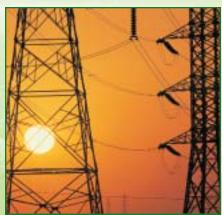
Case study

In Mexico, DOE is closing the gap between sources of private capital and qualified energy and environmental projects. DOE is supporting the creation of funding mechanisms for energy efficient projects. The aim is to make capital more affordable and accessible, and reduce risk, uncertainty and costs for all parties. The goal is being achieved by addressing the structural or systemic impediments to financing clean energy and efficiency projects. DOE is working with the Mexican Government, the State Government of Monterey, the University of Monterey, NADBank, and The World Bank.









Healthy Homes and Communities

Why HHC

- More than two billion people worldwide use traditional biomass fuels for cooking and heating, accounting for an estimated two million premature deaths annually, primarily among women and children
- Air pollution in many cities in the developing world is reaching crisis proportions – motor vehicles account for a significant portion of this urban air pollution

Goal

Reduce health impacts from motor vehicle emissions and combustion pollutants indoors

- The Partnership for Clean Indoor Air
 is increasing the use of affordable,
 reliable, clean and efficient home cooking
 and heating practices to prevent the
 premature deaths of an estimated two
 million people annually due to elevated
 indoor levels of smoke
- The Partnership for Clean Fuels and Vehicles is eliminating the use of lead in gasoline worldwide and helping developing countries reduce sulfur in gasoline and diesel fuels, while also introducing clean vehicle technology

Desired outcomes

- Action plans for elimination of leaded gasoline
- Cleaner fuel and vehicle requirements and commitments
- Phase down of sulphur in diesel and gasoline fuels
- Improved cooking and heating practices
- Reduced exposures to elevated levels of indoor pollutants

Objectives

- Serve as a platform for exchange of experiences and successful practices
- Conduct public outreach, educational programs, awareness campaigns
- Adapt economic and planning tools for clean fuels and vehicles analyses in local settings
- Foster key partnerships between government, industry, NGOs
- Demonstrate and promote effective strategies for overcoming social/behavioral barriers, developing local markets, meeting design guidelines and monitoring exposure and health effects





Partners

62 countries, private sector companies, oil and auto industries, NGOs and international organizations

Partners commit to

- Help developing countries to develop action plans to eliminate leaded gasoline and phase down sulphur in diesel and gasoline fuels
- Provide a platform for exchange of experiences and successful practices in developed and developing countries as well as technical assistance
- Develop public outreach materials, educational programs and awareness campaigns
- Foster key partnerships between government, industry, NGOs and other interested parties

Case study

In Mexico, USEPA is implementing both its partnerships under the Healthy Homes and Communities initiative. The Partnership for Clean Fuels and Vehicles is collaborating with the Mexican government on a pilot program to retrofit older city buses with new emission control technologies and low-sulfur diesel fuel; and to help analyze the costs and benefits of reducing sulfur from diesel and gasoline fuels in Mexico, with a focus on the health benefits to Mexico. The Partnership for Clean Indoor Air kicked off efforts in Mexico by hosting a meeting with government and NGOs involved in indoor cooking and heating issues. Participants agreed to develop a Partnership strategy for Mexico, discuss potential roles for each stakeholder, and explore ways to collaborate more effectively.







Partners to Date

Bolivia. Centro de Desarrollo en

Energìa Solar Bolivia, Ministry of Public Works Brazil, Ministry of Mines and Energy Brazil, Sao Paulo State Secretariat for the Environment Cameroon, Agence d'Electrification Rurale

Canadian International Development Agency Denmark, Royal Danish Ministry of Foreign Affairs

Dominican Republic Ministry of Industry & Commerce

Ecuador, Electricity Council of Ecuador Ethiopia, Geological Survey Ethiopia, Rural Energy Development and

Promotion Center France, Agence France de Developpement

France, Ministry of Foreign Affairs Germany, Federal Environmental Ministry Germany, GTZ German Technical Co-operation

Germany, Kreditanstalt für Wiederaufbau Ghana, Ministry of Energy

Guatemala, Ministry of Energy Honduras Dirección de Energia

Honduras, Dirección de Energia

Honduras, Secretary of Natural Resources and Environment

India, Central Board of Irrigation and Power Italy, Ministry for the Environment and Territory

Lesotho, Department of Energy Liberia, Center for Sustainable Energy Technology

Mexico, Grupo de Estudos e

Desenvolvimento de Alternativas Energé Mexico, Ministry of Energy Pakistan, Ministry of the Environment Peru, Ministry of Energy and Mines Philippines, Department of Energy

Republic of South Africa, Department of Minerals and Energy

Swedish International Development Agency Tanzania, United Republic of

The Netherlands, Ministry of Foreign Affairs U.K., Department for International Development

U.S. National Renewable Energy Laboratory U.S. Sandia National Laboratories

United States Agency for International Development

United States Department of Energy Zambia, Ministry of Energy and Water Development

Multilateral organizations

Energy Sector Management Program **European Commission** FAO

United Nations Development Programme United Nations Environment Programme The World Bank

Non-government organizations

Action For Food Production **AEA Technology**

African Energy Policy Resource Network Foundation Against Social Trauma and **Environmental Ravages**

Agency of Universal access to Services Albanian Ecological Club - International

Friends of Nature Aligarh Muslim University

All India Women's Conference

Alternative Energy Institute

Appropriate Technology Center

Approtech Asia

Australian CRC for Renewable Energy AVD/RIOD-AO

Basel Agency for Sustainable Energy Bhartiya Dnyanpith Bahuudeshiya Gramin Vikas Sanstha Wadqaon

Biomass Energy for Rural India Project Biomass Users Network - Central America Bureau of Environmental Analysis International

Business Council for Sustainable Energy Carbona

CEFA Tanzania

Center for Energy and Environmental Policy Center for Renewable Energy and

Appropriate Technologies

Climate Institute

Club zur Laendlichen Elektrifizierung Community Development Carbon Fund

Community Orientated Sustainable Development Initiative

Community Power Corporation Consejo Empresarial de Desarrollo

Sostenible CRESF

Durban Institute of Technology

F+Co

East African Energy Conservation Alliance East African Energy Technical Development

Ecotechnology, Mid-Sweden University Electric Power Research Institute

Electrical Engineering Division

ENDA

ENERGIA

Energia y Telecommunicaciones Andinas **Energy and Development Research Centre** Energy and Environmental Concerns for

7ambia

Energy Forum

Energy Management Centre

Energy Management Group

Energynet Limited Enersol, Inc

Engineers Against Poverty

Engineers Without Borders **Environment Protection Training and** Research Institute

FRA Cameroun

Fiorello H. LaGuardia Foundation

Forum One Communications Foundation

Against Social Trauma and **Environmental Ravages**

Foundation Against Social Trauma and **Environmental Ravages**

Fundação Para O Desenvolvimento Tecnológico Da Engenharia

Future Energy Solutions

Gender and Energy Research and Training

Green Empowerment

Green Markets International

Grupo Interdiscipinario de Tecnología Rural Anroniada A C

Haggai Philanthropy Centre Uganda HEDON Household Energy Network Hind Privileges

ILZRO RAPS Peru

Indira Gandhi Institute of Developmental Research

Institute for Sustainable Power

Integrated Rural Development Organization Integrated Sustainable Energy & Ecological Development Association

International Center for Sustainable Development

International Energy Initiative

International Lead Zinc Research Organization, Inc.

International Solar Energy Society

ITDG-Nepal

ITDG-Peru

ITDG-South Asia

Jerome Weingart and Associates

Joaquim Nabuco Foundation /

Energia/Joaquim Nabuci Foundation Kadikoyu Friends of Science, Culture and

Art Association Kumasi Institute of Technology and

Environment

Light Up The World Foundation

Mali-Folkecenter

Management & Planning Organization Massachusetts Renewable Energy Trust Mbutu Agriculture Society ECOSOC UN

MECON LIMITED

Minerals & Energy Policy Centre

Munasinghe Institute for Development Natural Resources Defense Council

Nature Conservancy China Program New Mexico State University

Nimbkar Agricultural Research Institute



NRECA International Ltd

Organization of American States

Pakistan Energy and Environment Management Centre

Pembina Institute for Appropriate

Development

Persons Helping People/Solar Ovens

Pothohar Water Partnership

Renewable Energy & Agricultural **Development Foundation**

RITES Ltd

Sandia National Laboratories

Saraswathy Shanmugam Public

Charitable Trust Save Earth Nigeria

Save Environment Management

SEWA

Shakti: Energy Website of Bangladesh

Solar Development Group

Solar Electric Light Company

Solar Electric Light Fund

Solar Energy Network Solar Energy Society of Central Africa

Somali Association for Sustainable

Energy & Development

Sonnenenergie fuer Westafrika Stakeholder Forum for Our Common Future

Stockholm Environment Institute -

Boston Center

Sussex Research Associates Ltd

Sustainable Rural Enterprise

Sustainable Village LLC

Tangier Faculty of Sciences and

Technologies

Tanzania Traditional Energy Development

and Environment

Tata Energy Research Institute

Tellus Institute/SEI-Boston

The Ashden Awards for Sustainable Energy Trust for Voluntary Organizations

Ukuvuka Operation Firestop

UMA-Atlantic Forest Open University

Umgeni Water University of Las Palmas

de Gran Canaria

UNC/Technological Solutions for Social Development

University of Zaragoza

US Hydropower Council for International

Development

Utilities Planning Associates

Utility Automation Integrators, Incorporated

Winrock International

World Energy Council

Xavier Institute of Management

Yayasan Bina Usaha Lingkungan

Private organizations

ABB Group

Acumen International

African Energy

Agama Energy Ltd

AHAssociates

Al Tayyar Energy Ltd

APRODEST

Asia Credit Fund BBRM Investments, LLC

BD Consult

bilco consultants international

Biodesign

BP Solar Ltd

British Petroleum

Canada ExSolar Systems International Inc.

Class Energy LLC

Clouston Energy Research

Conside Ltd Energy Consulting firm

Consumer Energy Council of America

CORE International, Inc

CTSC Consulting

Cygnus Renewable Energy

Dasag Energy Engineering Ltd

David Suzuki Foundation

DESI Power: Decentralized Energy

Systems India Ltd

DG Development Electricite de France

Elektroplan Consulting Engineers

Energy & Security Group

Energy Conversion Devices

Energy for Sustainable Development Ltd

Energy Studies Application Institute

Farmworks International

Free Energy Europe

Global Sustainable Energy Solutions Pty Ltd

Global Transition Consulting

Grameen Shakti

IMA International

Independent Consultant **India Power Associates**

Innovation Energie Developement

Integrated Energy Solutions Pvt Ltd

Integrated Research and Action for

Development

International Copper Association, Ltd

Isofoton

IT Power India

IT Power U.S., Inc

Lahmeyer International GMBH

LEVON Group, LLC

LGA Consultants Ltd/Sage Training Pvt Ltd

National Environmental Consulting Nuon RAPS Utility

Optimum Energy Senegal ORMAT International

P.T. Minaca Selaras

PA Energy Ltd

Pace University Energy Project

Parallax Sustainable Development Solutions

PFE Power Solutions

Preferred Energy, Inc Prokaushali Sangsad Limited

RAPS Consulting Pvt Ltd

RAPS Finance

Regulatory Economics Group LLC

REMEDE

RenewableEnergyAccess.com

Sabraa Bank

Sahyadri Energy Systems Private Limited

Schneider Electric

SELCO

Seth Willey Solar

SGA Energy Ltd

Sociedade do Sol

Societe de Services Decentralisees Nuon

EDF

Solamatics SolAqua

Solar Engineering Services

Solar Household Energy, Inc

Solar Industries Association

Solar International Management, Inc

Standard Corporate and Merchant Bank Stean & Associates Business Development

Services

Strategic Consulting Partners

SUN OVENS International, Inc.

Sunseed Tanzania Trust

Sustainable Energy Solutions

Symbiotic Research Action Group

U.S. Energy Association

Washington Liaison Office World Water

Partners to Date

Governments

Australia Botswana

Brazil

China

India

Mexico Philippines

United Kingdom

Non-government organizations

Alliance to Save Energy

Asia Pacific Economic Cooperation forum

Business Council for International Understanding

Business Council for Sustainable Energy Clark University

CLASP (Collaborative Labeling and Appliance Standards

Florida International University - Center for Energy and

Technology of the Americas

Global Environment and Technology Foundation Global Environment Management Institute

International Council for Local Environmental Initiatives

International Institute for Sustainable Development

Lawrence Berkeley National Laboratory

National Academy of Engineering

National Academy of Sciences

The World Federation of Engineering Organizations US/China Energy and Environment Technology Center

Winrock International

Private organizations

AEP

Baker and McKenzie

Biotechnology Industry Organization

Canadian Energy Research Institute

Cap Gemini Ernst & Young

Chevron/Texaco

CME North American Merchant Energy

Commonwealth Bank of Australia

Deloitte Touche Tohmatsu

Duke Energy Dupont

E-7

Edison Electric Institute

Energy Conversion Devices

Energy Future Coalition

Environics International

Environmental Business International

FE Clean Energy Group, Inc.

Gas Technology Institute

Interlink Capital Strategies

International Utility Efficiency Partnership

National Mining Association

National Rural Electric Cooperative Association

Navista

North American Development Bank

North American Insulation Manufacturers Association

Ormat

Peer Consultants P.C.

Resource Mobilization Advisors

Southern Company

Sparber and Associates Inc.

Summitt Ventures, LLC

Swiss Re

The Dow Chemical Company

United States Energy Association

University of Monterey

Efficient Energy for Sustainable Development



International organizations

Asia Pacific Economic Cooperation Forum – Energy Working Group

Bi-lateral Energy Working Groups – Japan, EU, Russia, China, India, Ukraine, Venezuela and others G-8 Energy Working Group

International Energy Agency

North American Energy Working Group OECD

United Nations Commission on Sustainable Development

United Nations Economic Commission for Europe

The World Bank

Partners to Date

Governments

Partnership for Clean Fuels and Vehicles

Australia, Environment Australia
Canada, Environment Canada
Canadian International Development Agency (CIDA)
Central American Commission on Environment and
Development (CCAD)

Congo, Democratic Republic of, Ministere de l'Environnement Conservation de la Nature, Eaux et Forets

Ghana, Environmental Protection Agency

Guatemala and Belize

Chile

China

Italy, Ministry of Environment and Territory

Kenya, National Environmental Management Authority Mexico, Office for Environment and Natural Resources (SEMARNAT)

Mozambique, Ministry for Coordination of Environmental

Netherlands, The, Ministry of Housing, Spatial Planning, and Environment

Nigeria. Federal Ministry of Environment and Ministry of Industry

South Africa, Department of Minerals and Energy United States Environmental Protection Agency (U.S. EPA) United States Agency for International Development (U.S. AID) United States Department of Energy (U.S. DOE)

Multilateral organizations

Pan American Health Organization (PAHO) Trust for Lead Poisoning Prevention UN Department of Economic and Social Affairs (DESA) UN Environmental Programme (UNEP)

Non-government organizations

Environmental and Energy Technology and Policy Institute Environmental Defense Environmental Liaison Centre International FIA Foundation Forum for Environment, Ethiopia Global Environmental Technology Foundation Lawyer's Environmental Action Team, Tanzania The Lead Group. Australia

Southern Centre for Energy and Environment, Zimbabwe

Natural Resources Defense Council

Partnership for Clean Indoor Air

Belize

Canada

Central America (Costa Rica, Panama, Nicaragua, El Salvador, Honduras) Commission for Central American Development (CCAD)

France

Guatemala

Italy

Mexico

Mozambique

South Africa

U.S.A.

Pan American Health Organization (PAHO)
UN Department of Economic and Social Affairs (DESA)
UN Environment Programme (UNEP)
The World Bank
World Health Organization (WHO)

Appropriate Rural Energy Institute (ARTI)

Aprovecho Research Center

CEDESOL - BOL

Colorado State University Engines and Energy Conversion Laboratory

Development Alternatives

ETHOS

Global Environment and Technology Foundation

Health Effects Institute

HELPS International

Indian Institute of Technology

Intermediate Technology Development Group

Proleña

Lawrence Berkeley National Laboratory

Shell Foundation

UC/Berkeley's Renewable and Appropriate Energy Lab

University of Liverpool - Department of Public Health

Resources for the Future

Trees, Water & People University of WA

Winrock International

Healthy Homes and Communities



Private organizations

Alliance of Automobile Manufacturers
American Honda
American Petroleum Institute
Association of European Automobile Manufacturers (ACEA)
Association for Emission Control by Catalyst
Association of International Automobile Manufacturers
BP Products North America Inc.
Engine Manufacturers Association
Ethyl
European Fuel Oxygenates Association

European Fuel Oxygenates Association International Fuel Quality Center (IFQC) International Petroleum Industry Environmental Conservation Assn (IPIECA) International Truck and Engine Japan Automobile Manufacturer's Association

Lubrizol Corporation
Manufacturers of Emissions Control Association (MECA)
Organisation Internationales des Constructeurs

d'Automobile (OICA)

Petrobras

Petroleum Industry of East Africa, Kenya

LPG Association of Southern Africa Solar Household Energy, Inc. World L.P. Gas Association





For more information on the Global Village Energy Partnership

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For more information on Healthy Homes and Communities U.S. Environmental Protection Agency

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 Jane Metcalfe
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 www.unep.org/PCF